MYCOTAXON

ISSN (print) 0093-4666 (online) 2154-8889 Mycotaxon, Ltd. © 2019

April–June 2019—Volume 134, pp. 409–412

https://doi.org/10.5248/134.409

Book reviews and notices*

Else C. Vellinga

861 Keeler Avenue, Berkeley CA 94708 USA

Abstract—Books reviewed include Syllabus of Plant Families—A. Engler's Syllabus der Pflanzenfamilien. 1/3 *Basidiomycota* and *Entorrhizomycota* by Begerow, McTaggart, and Agerer (W. Lang ed.) and Fungi lepiotoidei (*Agaricaceae*) edited by Zhu-Liang Yang (2019).

General

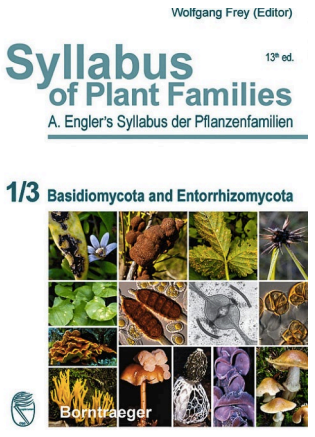
Syllabus of Plant Families—A. Engler's Syllabus der Pflanzenfamilien. 1/3 *Basidiomycota* and *Entorrhizomycota*. 13th ed. By Wolfgang Frey (ed.) 2018. Borntraeger Science Publishers, Johannesstr. 3A, 70176, Stuttgart, Germany. xii+471p. 43 figs. ISBN 978-3-443-01098-0. Price (excl. postage): € 139. www.borntraeger-cramer.com/9783443010980

Two years after the volume on *Ascomycota* (Jaklitsch & al. 2016), the current work was published, giving an overview of the *Basidiomycota* and the *Entorrhizomycota*.

Only three authors wrote the text: Dominik Begerow and Alistair McTaggart took care of the *Pucciniomycotina*, *Ustilagomycotina*, and *Entorrhizomycota*, whereas Reinhard Agerer is the author for the *Agaricomycotina*.

This is a systematic overview, incorporating the newest insights and giving standardized descriptions for all genera in these groups. As such it replaces long out-of-date works such as Singer's 1986 monumental "The

* Book reviews or books for consideration for coverage in this column should be sent to the Editor-in-Chief <editor@mycotaxon.com> 6720 NW Skyline, Portland OR 97229 USA.



Agaricales in modern taxonomy," although the present work lacks keys and infrageneric classifications and is much wider in scope.

I am impressed with the morphological descriptions provided, which present a wealth of knowledge.

It is always a bit of a balancing act which genera to include, as modern data are not available for all genera. There are names that have not been used in decades, but this does not mean that they do not represent good solid genera. In some genera, most species—but not all—have been transferred to a more fitting genus, such as is the case for *Torrendia*. But as one Australian *Torrendia* species has not yet been combined in *Amanita*, the genus is still treated here separately.

Unfortunately, there are quite a number of strange mistakes, such as the statement that *Saproamanita* species are ectomycorrhizal. This genus was explicitly erected to accommodate the non-ectomycorrhizal species in *Amanita*, as is also reflected in the genus name (Redhead & al. 2016). Another example is *Notholepiota,* which here is still included in the *Agaricaceae*, although it was shown to be based on a secotioid bolete species, now called *Boletus semigastroideus* (Nuhn & al. 2013). Some genera, such as *Bonomyces* and *Cruentomycena* are not included, for unknown reasons.

There are also differences between the treatments of the *Pucciniomycotina* and *Ustilagomycotina* on the one hand, and the *Agaricomycotina* on the other. For instance, in *Agaricomycotina* the type species of a genus is only given for monotypic genera but is always cited for genera in the other two subphyla. Discussion on genus borders etc. are also given for the genera in the first two subphyla, and absent in the *Agaricomycotina*.

Of course, the description of new families and genera did not grind to a halt when this work was sent to the publisher. *Mythicomycetaceae* (Vizzini et al. 2019) and *Sarcoporiaceae* (Audet 2018) have recently been distinguished at the family level, and *Zhulangiomyces* (Redhead 2019) and *Clitopaxillus* (Alvarado & al. 2018) are just two examples of recently published genera in the *Agaricales*.

This overview is an especially useful and thorough piece of work that hopefully will be the standard for years to come. As such the SYLLABUS 1/3 deserves a place on many mycologists' bookshelves.

Alvarado P, Moreau P-A, Dima B, Vizzini A, Consiglio G, Moreno G, Setti L, Kekki T, Huhtinen S., Liimatainen K, Niskanen T. 2018. *Pseudoclitocybaceae* fam. nov. (*Agaricales*, *Tricholomatineae*), a new arrangement at family, genus and species level. Fungal Diversity 90: 109–133. https://doi.org/10.1007/s13225-018-0400-1

Audet S, 2018. *Sarcoporiaceae*. Mushrooms nomenclatural novelties no. 18: 1–6.

Jaklitsch W, Baral H.-O, Lücking R, Lumbsch HT, Frey W (eds). 2016. Syllabus of Plant Families. A. Engler's Syllabus der Pflanzenfamilien Part 1/2: *Ascomycota*.

Nuhn ME, Binder M, Taylor AFS, Halling RE, Hibbett DS, 2013. Phylogenetic overview of the *Boletineae*. Fungal Biology 117: 479–511. https://doi.org/10.1016/j.funbio

Redhead SA, 2019. Nomenclatural novelties. Index Fungorum 385: 1.

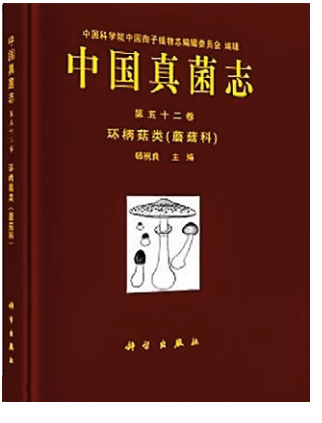
Redhead SA, Vizzini A, Drehmel DC, Contu M. 2016. *Saproamanita*,a new name for both *Lepidella* E.-J. Gilbert and *Aspidella* E.-J. Gilbert (*Amaniteae*, *Amanitaceae*). IMA Fungus 7: 119–129. https://doi.org/10.5598/imafungus.2016.07.01.07

Singer, R. The *Agaricales* in modern taxonomy. Ed. 4. Koeltz Scientific Books, Koenigstein, Federal Republic of Germany, 908 p., 88 pl.

Vizzini A., Consiglio G., Marchetti M., 2019. *Mythicomycetaceae* fam. nov. (*Agaricineae*, *Agaricales*) for accommodating the genera *Mythicomyces* and *Stagnicola*, and *Simocybe parvispora* reconsidered. FUSE 3: 41–56. https://doi.org/10.3114/fuse.2019.03.05

Basidiomycetes

Fungi lepiotoidei (*Agaricaceae*). By Zhu-Liang Yang (ed.). 2019. FLORA FUNGORUM SINICORUM VOL. 52. http://www.sciencep.com Science Press, Beijing, China. 228 p. 2 colour plates, 112 black & white figures, Hardcover. ISBN 978-7-03-060680-8. Price (excl. postage): 198.00 ¥; cited at $76 by www.chinascientificbooks.com



This 52nd volume in the series that aims at providing keys and descriptions of all fungi in China focuses on the lepiotoid fungi, to be more precise, all agaricoid genera in the *Agaricaceae* except *Agaricus* and *Micropsalliota*, a total of 14 genera. Most of these are white-spored, but some species in *Chlorophyllum* and the genera *Heinemannomyces*, *Hymenagaricus*, and *Melanophyllum* have coloured basidiospores.

An introduction to the group gives an overview of the recent literature, classification and phylogeny of the group (which represents only part of a monophyletic clade), and the morphology.

After the key to the genera, the genera are treated in alphabetical order, with keys to species, descriptions, and high-quality line drawings of all species that have been confirmed for the country. All collections on which the descriptions are based are listed. Those species listed in earlier works whose presence is questionable are briefly discussed. For 15 species, colour photos are provided. An extensive list of references and an index complete the work.

This book is the result of 15 years of work by Prof. Zhu-Liang Yang and his students (now professors themselves) Zai-Wei Ge and Jun-Feng Liang.

Lepiota has the highest number of taxa (48)—it interesting is to see how some species have a distribution area spanning from western Europe throughout the Northern Hemisphere into China, whereas others, especially those from southern, tropical China, have a much more limited distribution. Thanks to DNA comparisons of collections from Europe, North America and China, real distribution patterns emerge. In the past, when neither these techniques nor literature were available, names were adopted indiscriminately from other regions.

Some species listed under *Lepiota* (*L. shixingensis* and *L. furfuraceipes*) belong to *Leucoagaricus*. *Hymenagaricus taiwanensis* is now considered in the genus *Xanthagaricus*.

The last word on the Chinese lepiotoids has not been said yet—I am convinced that there are more species in *Leucoagaricus* than presented here, but that does not diminish the value of the present work, a value that extends far beyond China. The only drawback, of course, is the language, as the book is written in Chinese, but fortunately the names are presented in Latin.